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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/041,623 | 01/10/2002 | Masato Hayashi | Q68071 | 6584 |

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EXAMINER

SANTIAGO, MARICELI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/041,623

Examiner

Mariceli Santiago

Applicant(s)

HAYASHI, MASATO

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Sp cification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "the fluorescent layer has a film thickness of 0.05-0.5 nanometers", the recitation renders the claims indefinite since it is not clear as to how the fluorescent film having a film thickness of 0.05-0.5 nanometers would comprise a fluorescent material made of particles having a particle diameter of 10-200 nanometers as claimed in the preceding independent claim 10. For purpose of examination the limitation would be considered to read as "a film thickness of 0.05-0.5 micrometers".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hampden-Smith et al. (US 6,153,123).

Regarding claim 1, Hampden-Smith discloses a plasma display panel (Column 35, lines 28-33) having a fluorescent layer comprised of single crystal particles having a diameter of 25-100 nanometers (Column 38, lines 47-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. (US 6,100,633) in view of Hampden-Smith et al. (US 6,153,123).

Regarding claim 1, Okumura discloses a plasma display panel wherein a phosphor constituting a fluorescent layer of the plasma display panel is made of particles each having a diameter of 10-200 nanometers (Column 4, lines 3-30). Okumura is silent in regards to the limitation of the particles being mono-crystal particles. However, in the same field of endeavor, Hampden-Smith discloses a plasma display panel (Column 35, lines 28-33) having a fluorescent layer comprised of single crystal particles having a diameter of 25-100 nanometers, the single crystal particles increase the luminescent efficiency and brightness of the display panel (Column 38, lines 47-65). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the single crystal particles disclosed by Hampden-Smith in the plasma display panel of Okumura in order to further increase the luminescent efficiency and brightness of the display panel.

Regarding claim 2, Okumura discloses a plasma display panel wherein a reflection layer (12) for reflecting a light emitted from the phosphor is provided below the fluorescent layer (5).

Regarding claim 3, Okumura discloses a plasma display panel wherein the reflection layer is made of white pigment powder (Column 27-47).

Regarding claim 6, Okumura discloses a plasma display panel wherein the fluorescent layer has a film thickness of 0.05-1.0 micrometers (Column .

Regarding claim 7, Okumura discloses a plasma display panel wherein the reflection layer has a film thickness of 1-20 micrometers.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. (US 6,100,633) in view of Hampden-Smith et al. (US 6,153,123), and further in view of Osawa et al. (US 2000294148 A).

Regarding claims 4 and 5, the references Okumura and Hampden-Smith disclose the claimed invention except for the limitation of a color filter layer provided between the fluorescent layer and the reflection layer. In the same field of endeavor, Osawa discloses a plasma display panel further comprising the use of a filter layer (11R, 11G, 11B) made of an inorganic pigment (Paragraph [0032]) located adjacent to a phosphor layer (5R, 5G, 5B) in order to enhance contrast and brightness of the display and easily increase the accurate position of the color filter. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the color filter disclosed by Osawa in the plasma display panel of Okumura-Hampden-Smith in order to enhance contrast and brightness of the display and easily increase the accurate position of the color filter.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kado et al. (JP 11213892 A) in view of Hampden-Smith et al. (US 6,153,123), and further in view of Okumura et al. (US 6,100,633).

Regarding claim 10, Kado discloses a plasma display panel in which a rear-side glass substrate (21) provided with a data electrode (22) covered by a white dielectric (23) and a front-side glass substrate (11) provided with a transparent electrode (12) covered by a protection layer (14) and a transparent dielectric (13) are both sealed by a sealing material, in which a discharge cell (40) separated by a partition (30) is formed, wherein a fluorescent layer (31) is formed in such a manner as to cover the protection layer (14) of the front-side glass substrate (11). Kado fails to disclose the limitation of the fluorescent layer being made of mono-crystal particles having a particle diameter of 10-200 nanometers. However, in the same field of endeavor, Hampden-Smith discloses a plasma display panel (Column 35, lines 28-33) having a fluorescent layer comprised of single crystal particles having a diameter of 25-100 nanometers, the single crystal particles increase the luminescent efficiency and brightness of the display panel (Column 38, lines 47-65). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the single crystal particles disclosed by Hampden-Smith in the plasma display panel of Kado in order to further increase the luminescent efficiency and brightness of the display panel.

Furthermore, Kado fails to disclose the limitation of trace electrode provided along with the transparent electrode in the front-side substrate. In the same field of endeavor, Okumura discloses a plasma display panel comprising a front-substrate provided with a transparent electrode (6) and trace electrodes (7), the trace electrode are used to lower the resistance of the transparent electrodes, thus, prevent any unwanted drop voltage within the transparent electrodes. Thus, it would have been obvious at the time the invention was made to a person

having ordinary skills in the art to incorporate the trace electrodes disclosed by Okumura in the plasma display panel of Kado in order to lower the resistance of the transparent electrodes and prevent any unwanted drop voltage within the transparent electrodes.

Allowable Subject Matter

Claims 8, 9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 8 and 9, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 8 and 9, and specifically comprising the limitation of the inorganic pigment used to form the color filter layer has an average particle diameter of 10-200 nanometers.

Regarding claim 11, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 11, and specifically comprising the limitation of the fluorescent layer having a film thickness of 0.05-0.5 nanometers.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (703) 305-1083. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382. Additionally, the following fax phone numbers can be used during the prosecution of this application (703) 872-9318 (for response before a Final Action) and (703) 872-9319 (for response after a Final Action).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Ms. G | 26 | 03
Mariceli Santiago
Patent Examiner
Art Unit 2879


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